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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
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ART UNIT	PAPER NUMBER
4145	

NOTIFICATION DATE	DELIVERY MODE
05/01/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/544,785	LUNKWITZ ET AL.	
	Examiner	Art Unit	
	RAYMOND CHUNG	4145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20070723; 20050808*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regards to claim 1, the instant claim recites "a mixture comprising 10 to 90% by weight, based on the mixture, at least one carboxyl containing polysiloxane comprising a carboxyl group, from 90 to 10% by weight, based on the mixture, at least one carboxyl free polysiloxane, and from 3 to 25% by weight, based on the formulation, of at least one emulsifier". It is unclear as to whether or not said mixture comprises said emulsifier. Since the invention as claimed requires 1 to 30% by weight of mixture based on the formulation, choosing an amount less than 3% by weight of mixture based on the formulation would not allow one having ordinary skill to obtain 3 to 35% by weight of the at least one emulsifier based on the formulation if the emulsifier is a component of the mixture. Therefore, for the purpose of this Office action, the at least one emulsifier will be considered a component of the formulation and not of the mixture.

Claims 2 and 14 recite the "the at least one polysiloxane comprising a carbonyl group". There is insufficient antecedent basis for this limitation in the claim because only "at least one polysiloxane comprising a carboxyl group" is recited prior to said recitation (see claim, lines 7-9 and claim 13, lines 4-5).

With regards to claim 13, the at least one emulsifier will be interpreted as a component of the formulation and not of the mixture for the same reasons set forth above regarding claim 1.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-4, 8-10, 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kneip et al (US patent 5,702,490) in view of Lohmann et al (US patent 5,658,484).

With regards to claim 1, Kneip discloses a process for imparting water repellency to leather and fur skins, comprising

treating the leather or the fur skins (C3/L62-64, treatment is carried out with drumming) with at least one formulation (C4/L35-42, aqueous emulsion considered a formulation) comprising

from 10-90% of at least one polysiloxane comprising a carboxyl group (C4/L35-42, 3 to 90%), and

from 3 to 25% by weight, based on the formulation, of at least one emulsifier (C4/L37, 3 to 30%).

Kneip et al does not disclose the formulation further comprising at least one carboxyl-free polysiloxane.

Lohmann et al disclose the use of agents for waterproofing leather and furs comprising at least one carboxyl-free polysiloxane (such as polydimethylsiloxane, C3/L46), and at least one emulsifier (C2/50-51).

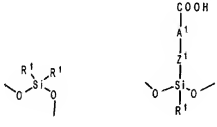
Kneip et al and Lohmann et al disclose analogous inventions related to waterproofing leathers and furs. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to combine the carboxyl-containing

polysiloxane taught by Kneip et al with the carboxyl-free polysiloxane taught by Lohmann et al into a mixture for the purpose of obtaining a hydrophobing formulation for leather and fur. The combination of the carboxyl-containing polysiloxane taught by Kneip et al with the carboxyl-free polysiloxane taught by Lohmann et al into a mixture would amount to nothing more than combining two compositions each useful for the same purpose in order to form a third composition used for the same purpose since it has been held that "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See MPEP 2144.06.

Regarding the claimed weight percentage of mixture and of the carboxyl-free polysiloxane, it is noted that since the level of water repellancy is a variable that can be modified by adjusting the weight percentage of mixture and the weight percentage of the carboxyl-free polysiloxane within the mixture, the weight percentage of mixture and the weight percentage of carboxyl-free polysiloxane within the mixture would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentages cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of mixture and the weight percentage of the

carboxyl-free polysiloxane within the mixture to suit user preference in the level of water repellancy desired (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

With regards to claim 2, modified Kneip et al teaches all of the claim limitations set forth above, as well as the process set forth above wherein the at least one polysiloxane comprising a carbonyl group further comprises the structural elements of the formulae I and II



I II (Kneip et al, C2/L55-60, R3 corresponds to R1 of structural element I and II)

wherein R^1 are identical or different and, independently of one another, are hydrogen, a hydroxyl, a C_1-C_4-alkyl, a C_6-C_{14}-aryl, a C_1-C_4-alkoxy, an amino, a mono-C_1-C_4- alkylamino, a di-C_1-C_4-alkylamino (Kneip et al, C2/L62-65) or a Z^1-A^1-COOH group; A^1 are identical or different and are a linear or a branched C5-C25-alkylene (Kneip et al, C3/L1); and Z^1 is a direct bond, an oxygen, an amino, a carbonyl, an amido or an ester group (Kneip et al, C3/L2-4).

With regards to claim 3 and 7, modified Kneip et al teaches all of the claim limitations set forth above, as well as the process set forth above wherein the at least one formulation comprises from 10 to 70% by weight (Kneip et al, C3/L28-29, in an amount of up to 90%), based on the formulation, of at least one further hydrophobic compound (Kneip et al, C3/L24-28, natural fats or natural oils, for example fish oil); (claim 3)

- wherein the at least one further hydrophobic compound comprises at least one natural triglyceride (Kneip et al, C3/L24-28, natural fats or natural oils, for example fish oil) and a paraffin mixture (Kneip et al, C3/L24, liquid paraffins). (claim 7)

With regards to claim 4, modified Kneip et al teaches all of the claim limitations set forth above, as well as the process wherein the at least one emulsifier is an N-acylated amino acid (Kneip et al, C3/L35-38).

With regards to claims 8 and 9, modified Kneip et al teaches all of the claim limitations set forth above, as well as the process set forth above wherein the treating is carried out at a pH of from 4 to 9 (Kneip et al, C4/L1-2, 4.5 to 8);

- wherein the treating is carried out at from 20 to 65 ^{o}C (Kneip et al, C3/L67, 20^{o} to 60 ^{o}C). (claim 9)

With regards to claim 10 and 12, modified Kneip et al teaches all of the claim limitations set forth above as well as a leather or fur skin (Kneip et al, C1/L51-52) produced by the process set forth above. One of ordinary skill would understand that a water repellant leather or fur would be produced as expected from the process set forth above.

With regards to claim 13, Kneip discloses a formulation (C4/L35-42, aqueous emulsion considered a formulation) comprising from 10-90% of at least one polysiloxane comprising a carboxyl group (C4/L35-42, 3 to 90%), and from 3 to 25% by weight, based on the formulation, of at least one emulsifier (C4/L37, 3 to 30%).

Kneip et al does not disclose the formulation further comprising at least one carboxyl-free polysiloxane.

Lohmann et al disclose the use of agents for waterproofing leather and furs comprising at least one carboxyl-free polysiloxane (such as polydimethylsiloxane, C3/L46), and at least one emulsifier (C2/50-51).

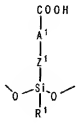
Kneip et al and Lohmann et al disclose analogous inventions related to waterproofing leathers and furs. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to combine the carboxyl-containing polysiloxane taught by Kneip et al with the carboxyl-free polysiloxane taught by Lohmann et al into a mixture for the purpose of obtaining a hydrophobing formulation for leather and fur. The combination of the carboxyl-containing polysiloxane taught by Kneip et al with the carboxyl-free polysiloxane taught by Lohmann et al into a mixture would amount to nothing more than combining two compositions each useful for the same purpose in order to form a third composition used for the same purpose since it has been held that "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them

flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See MPEP 2144.06.

Regarding the claimed weight percentages of mixture and of the carboxyl-free polysiloxane, it is noted that since the level of water repellancy is a variable that can be modified by adjusting the weight percentage of mixture and the weight percentage of the carboxyl-free polysiloxane within the mixture, the weight percentage of mixture and the weight percentage of carboxyl-free polysiloxane within the mixture would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentages cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of mixture and the weight percentage of the carboxyl-free polysiloxane within the mixture to suit user preference in the level of water repellancy desired (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

With regards to claim 14, modified Kneip et al teaches all of the claim limitations set forth above, as well as the formulation set forth above wherein the at least one polysiloxane comprising a carbonyl group further comprises the structural elements of the formulae I and II

I



II

(Kneip et al, C2/L55-60, R3 corresponds to R1 of structural element I and II)

wherein R^1 are identical or different and, independently of one another, are hydrogen, a hydroxyl, a C_1-C_4-alkyl, a C_6-C_{14}-aryl, a C_1-C_4-alkoxy, an amino, a mono-C_1-C_4- alkylamino, a di-C_1-C_4-alkylamino (Kneip et al, C2/L62-65) or a Z^1-A^1-COOH group; A^1 are identical or different and are a linear or a branched C5-C25-alkylene (Kneip et al, C3/L1); and Z^1 is a direct bond, an oxygen, an amino, a carbonyl, an amido or an ester group (Kneip et al, C3/L2-4).

With regards to claims 15 and 16, modified Kneip et al teaches all of the claim limitations set forth above, as well as the formulation set forth above wherein the at least one formulation comprises from 10 to 70% by weight (Kneip et al, C3/L28-29, in an amount of up to 90%), based on the formulation, of at least one further hydrophobic compound (Kneip et al, C3/L24-28, natural fats or natural oils, for example fish oil); (claim 15)

- wherein the at least one further hydrophobic compound comprises at least one natural triglyceride (Kneip et al, C3/L24-28, natural fats or natural oils, for example fish oil) and a paraffin mixture (Kneip et al, C3/L24, liquid paraffins). (claim 16)

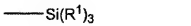
With regards to claim 17, modified Kneip et al teaches all of the claim limitations as set forth above.

While modified Kneip et al teaches a formulation comprising at least one polysiloxane comprising a carboxyl group and at least one carboxyl-free polysiloxane and at least one emulsifier as set forth above, the references do not explicitly teach the process comprising mixing the at least one polysiloxane comprising a carboxyl group with the at least one carboxyl-free polysiloxane and the at least one emulsifier.

However, modified Kneip et al does disclose that stable emulsions are formed directly when a polysiloxane comprising a carboxyl group and an emulsifier are mixed together (Kneip et al, C5/L26-27) and, similarly, that carboxyl-free polysiloxanes can be mixed with emulsifiers (Lohmann et al, C5/L11-13, polydimethylsiloxane mixed with emulsifier).

Therefore, it would have been obvious to one having ordinary skill in the art to combine the at least one polysiloxane comprising a carboxyl group with the at least one carboxyl-free polysiloxane and the at least one emulsifier by way of mixing because it is known in the art that polysiloxanes comprising a carboxyl group and carboxyl-free polysiloxanes can be mixed with emulsifiers to form emulsions.

With regards to claim 18, modified Kneip et al teaches all of the claim limitations set forth above, as well as the process set forth above wherein the at least one polysiloxane comprising a carbonyl group further comprises the structural elements of the formulae III a and III b



III a III b

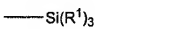
(Kneip et al, C2/L55-60, R3

corresponds to R1 of structural element III)

wherein

R1 are identical or different and, independently of one another, are hydrogen, a hydroxyl, a C1-C4-alkyl, a C6-C14-aryl, a C1-C4-alkoxy, an amino, a mono-C1-C4-alkylamino, a di-C1-C4-alkylamino or a Z^1-A^1-COOH group; A^1 are identical or different and are a linear or a branched C5-C25-alkylene; and Z^1 is a direct bond, an oxygen, an amino, a carbonyl, an amido or an ester group (Kneip et al, C2/L55-60, R3 corresponds to R1 of structural element III).

With regards to claim 19, modified Kneip et al teaches all of the claim limitations set forth above, as well as the formulation set forth above wherein the at least one polysiloxane comprising a carbonyl group further comprises the structural elements of the formulae III a and III b



III a III b

(Kneip et al, C2/L55-60, R3

corresponds to R1 of structural element III)

wherein

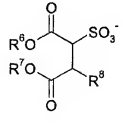
R1 are identical or different and, independently of one another, are hydrogen, a hydroxyl, a C1-C4-alkyl, a C6-C14-aryl, a C1-C4-alkoxy, an amino, a mono-C1-C4-

alkylamino, a di-C1-C4-alkylamino or a Z^1-A^1-COOH group; A^1 are identical or different and are a linear or a branched C5-C25-alkylene; and Z^1 is a direct bond, an oxygen, an amino, a carbonyl, an amido or an ester group (Kneip et al, C2/L55-60, R3 corresponds to R1 of structural element III).

7. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kneip et al (US patent 5,702,490) in view of Lohmann et al (US patent 5,658,484) as applied to claim 1 above in further view of Birkhofer et al (US patent 5,914,442).

With regards to claim 5 and 6, modified Kneip et al teaches all of the claim limitations set forth above.

While modified Kneip et al teaches the use of at least one emulsifier (Kneip et al, C3/L30-43), the references do not specifically teach the method set forth above wherein the at least one emulsifier comprises sulfur or that the at least one emulsifier comprises at least one compound of the general formula VI



VI

wherein

R6 and R7 are identical or different and are selected from the group consisting of hydrogen, a C1-C30-alkyl and a C6-C14-aryl group and

R8 is a C1-C4-alkyl group or hydrogen.

Birkhofer et al discloses aqueous dispersions of copolymers suitable for fatliquoring and filling leather and furs (see abstract) comprising emulsifiers containing sulfur, specifically di-C5-C20-alkyl 2-sulfosuccinates, such as sodium diisoamyl 2-sulfosuccinate (C5/L11-14).

Modified Kneip et al and Birkhofer et al disclose analogous inventions related to using emulsifiers to produce aqueous dispersions of copolymers used to treat leather and furs. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use the di-C5-C20-alkyl 2-sulfosuccinates disclosed by Birkhofer et al in the method set forth by modified Kneip et al for the purpose of forming emulsions in water since it is known in the art that di-C5-C20-alkyl 2-sulfosuccinates are useful in emulsifying copolymers used to treat leather and furs. It would amount to nothing more than using a known compound for its intended purpose to yield predictable results.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kneip et al (US patent 5,702,490) in view of Lohmann et al (US patent 5,658,484) as applied to claim 1 and 10 above in further view of Heidemann (in Ullman's Encyclopedia of Industrial Chemistry, hereafter referred to as Ullmann's).

With regards to claim 11, modified Kneip et al teaches all of the claim limitations set forth above.

While the references teach the production of a water repellent leather as set forth above, modified Kneip et al does not specifically disclose incorporating the leather set forth above into an article of clothing, piece of furniture, or automotive part.

Heidemann teaches that leather is used for shoes, upholstery, clothing, and carpets, among other purposes (Ullman's P259, introduction, first paragraph).

Modified Kneip et al and Heidemann disclose analogous inventions related to the treatment of leather. Therefore, one having ordinary skill in the art would expect that the leather produced by the process set forth above could be incorporated into any of a number of applications well-known in the art as evidenced by Heidemann. It would have been obvious to one having ordinary skill in the art to produce an article of clothing, piece of furniture, or automotive part comprising the leather set forth above as this would amount to nothing more than using a known product for its intended purpose to yield predictable results.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND CHUNG whose telephone number is (571)270-3881. The examiner can normally be reached on Monday-Thursday, 8am-5:30pm EST, Alt. Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R.C./
22 April 2008

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 4145